What is claimed is:

1. A high throughput liquid chromatography system comprising:

a plurality of separation columns containing stationary phase material and adapted to perform a plurality of parallel chromatographic separations;

a plurality of flow-through detection regions in fluid communication with the plurality of separation columns, wherein each detection region of the plurality of detection regions has a flow axis;

a common radiation source for emitting radiation, wherein at least a portion of the radiation is transmitted into each detection region of the plurality of detection regions substantially coaxially with the flow axis of each detection region of the plurality of detection regions;

a wavelength selection element disposed between the common radiation source and the plurality of detection regions; and

a multi-channel detector in sensory communication with each detection region of the plurality of detection regions.

2. The system of claim 1 wherein the plurality of separation columns are adapted to perform pressure-driven chromatographic separations.

3. The system of claim 1 wherein each separation column of the plurality of separation columns is microfluidic.

4. The system of claim 3, further comprising:

a common source of pressurized mobile phase; and

a fluidic distribution network in fluid communication with the mobile phase source and with each separation column of the plurality of separation columns.

5. The system of claim 3 wherein the plurality of microfluidic separation columns is integrated into a unitary device.

6. The system of claim 5 wherein the plurality of detection regions are disposed within the unitary device.

7. The system of claim 1, further comprising at least one optical conduit disposed between the wavelength selection element and the plurality of detection regions for transmitting radiation emitted from the radiation source to the plurality of detection regions.

8. The system of claim 7 wherein the at least one optical conduit comprises a plurality of fiber optic conduits.

9. The system of claim 7, further comprising a plurality of flow cells, wherein each detection region of the plurality of detection regions is disposed within a different flow cell of the plurality of flow cells.

10. The system of claim 9, further comprising a plurality of capillary conduits disposed between, and in fluid communication with, the plurality of separation columns and the plurality of flow cells.

11. The system of claim 1 wherein:

each detection region of the plurality of detection regions includes a fluid flow channel along the flow axis;

each fluid flow channel has a length and a width; and

the length is greater than the width.

12. The system of claim 1 wherein each detection region of the plurality of detection regions includes a fluid flow channel along the flow axis, and each fluid flow channel has a length of at least about two millimeters.

13. The system of claim 1 wherein the radiation source comprises a broadband emission UV source.

14. The system of claim 13 wherein the broadband emission UV source comprises a deuterium lamp or an arc lamp.

15. The system of claim 1 wherein the wavelength selection element comprises a plurality of discrete wavelength filters.

16. The system of claim 1 wherein the wavelength selection element comprises a plurality of monochromators.

17. The system of claim 1 wherein the wavelength selection element comprises a plurality of wavelength dispersion elements.

18. The system of claim 1, further comprising a photomask disposed between the wavelength selection element and the multi-channel detector.

19. The system of claim 1 wherein the multi-channel detector comprises a multi-anode photomultiplier.

20. The system of claim 1 wherein the multi-channel detector comprises a charge-coupled device detector.

21. The system of claim 1 wherein the multi-channel detector comprises any of a diode array and a photodiode array.

22. The system of claim 1 wherein the multi-channel detector includes a reference channel used to correct signals received from at least one other channel of the multi-channel detector.

23. The system of claim 1 wherein the plurality of separation columns includes at least ten separation columns, the plurality of detection regions includes at least ten detection regions, and the multi-channel detector includes at least ten channels.

24. The system of claim 1 wherein the plurality of separation columns includes at least twenty separation columns, the plurality of detection regions includes at least twenty detection regions, and the multi-channel detector includes at least twenty channels.

25. A high throughput liquid chromatography system comprising:

a plurality of separation columns containing stationary phase material and adapted to perform a plurality of parallel chromatographic separations;

a plurality of flow-through detection regions in fluid communication with the plurality of separation columns, each detection region of the plurality of detection regions having a flow axis;

a common radiation source;

a plurality of optical conduits coupled to the radiation source and the plurality of detection regions, each optical conduit of the plurality of optical conduits being associated with a different detection region of the plurality of detection regions and transmitting radiation to its associated detection region along the flow axis;

a wavelength selection element disposed between the common radiation source and the plurality of optical conduits; and

a multi-channel detector in sensory communication with each detection region of the plurality of detection regions.

26. The system of claim 25 wherein the plurality of separation columns are adapted to perform pressure-driven chromatographic separations.

27. The system of claim 25 wherein each separation column of the plurality of separation columns is microfluidic.

28. The system of claim 27, further comprising:

a common source of pressurized mobile phase; and

a fluidic distribution network in fluid communication with the mobile phase source and with each separation column of the plurality of separation columns.

29. The system of claim 27 wherein the plurality of microfluidic separation columns is integrated into a unitary device.

30. The system of claim 29 wherein the unitary device comprises a plurality of substantially planar device layers.

31. The system of claim 30 wherein the substantially planar device layers include a plurality of stencil layers.

32. The system of claim 30 wherein each device layer of the plurality of device layers comprises an adhesiveless polymer layer, and the polymer layers are interpenetrably bound together.

33. The system of claim 32 wherein the polymer comprises a polyolefin.

34. The system of claim 29 wherein the plurality of detection regions are disposed within the unitary device.

35. The system of claim 25 wherein the plurality of optical conduits comprises a plurality of fiber optic conduits.

36. The system of claim 35, further comprising a plurality of flow cells, wherein each detection region of the plurality of detection regions is disposed within a different flow cell of the plurality of flow cells.

37. The system of claim 36, further comprising a plurality of capillary conduits disposed between, and in fluid communication with, the plurality of separation columns and the plurality of flow cells.

38. The system of claim 25 wherein:

each detection region of the plurality of detection regions includes a fluid flow channel along the flow axis;

each flow channel has a length and a width; and

the length is greater than the width.

39. The system of claim 25 wherein each detection region of the plurality of detection regions includes a fluid flow channel along the flow axis, and each flow channel has a length of at least about two millimeters.

40. The system of claim 25 wherein the radiation source comprises a broadband emission UV source.

41. The system of claim 40 wherein the broadband emission UV source comprises a deuterium lamp or an arc lamp.

42. The system of claim 25 wherein the wavelength selection element comprises a plurality of discrete wavelength filters.

43. The system of claim 25 wherein the wavelength selection element comprises a plurality of wavelength dispersion elements.

44. The system of claim 25 wherein the wavelength selection element comprises a plurality of monochromators.

45. The system of claim 25, further comprising a photomask disposed between the wavelength selection element and the multi-channel detector.

46. The system of claim 25 wherein the multi-channel detector comprises a multi-anode photomultiplier.

47. The system of claim 25 wherein the multi-channel detector comprises a charge-coupled device detector.

48. The system of claim 25 wherein the multi-channel detector comprises any of a diode array and a photodiode array.

49. The system of claim 25 wherein the multi-channel detector includes a reference channel used to correct signals received from at least one other channel of the multi-channel detector.

50. The system of claim 25 wherein the plurality of separation columns includes at least ten separation columns, the plurality of detection regions includes at least ten detection regions, and the multi-channel detector includes at least ten channels.

51. The system of claim 25 wherein the plurality of separation columns includes at least twenty separation columns, the plurality of detection regions includes at least twenty detection regions, and the multi-channel detector includes at least twenty channels.

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